Driveway Safety Design Guidelines: Summary of public feedback

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Driveway safety design guidelines

Discussion paper for public consultation: feedback report

Background

A discussion paper on Driveway Safety Design Guidelines was developed by the Department of Infrastructure and Regional Development (the Department) with the assistance of experts and key stakeholders, including the Australian Building Codes Board (ABCB), Kidsafe, the Queensland Injury Surveillance Unit, the Australian Institute of Architects, and the Australian Local Government Association. It drew on the available research evidence about the role of environmental factors in child run-over incidents, to propose a framework of best practice design principles and measures. The Department also sought views from a broader group of stakeholders: building, design and planning peak groups; Department of Health and Ageing; Department of Families, Housing, Community Services and Indigenous Affairs and Livable Housing Australia.

Design principles

The following six broad principles were proposed as a framework for minimising the risk to children from vehicles.

1. Recognise the vehicle areas on the property as a risk zone (garage to street).
2. Limit the size of vehicle areas, and the speed and number of vehicles accessing them.
3. Reduce unintended access to vehicle areas by young children.
4. Make vehicle areas and their surrounds clearly visible from inside the house.
5. Make vehicle areas and their surrounds clearly visible to drivers leaving and entering the property.
6. Increase visibility for both pedestrians and drivers at the junction between the driveway/ garage and the footpath

Specific design considerations relating to each of the principles are detailed in Attachment B.

Consultation

The discussion paper was published on the Department’s website (www.infrastructure.gov.au) for public comment from 25 June 2013 to 20 August 2013. Key national road safety stakeholders and participants in the driveway safety session at the 2012 National Road Safety Forum were notified of the public comment process.

Members of the public and interested parties were encouraged to provide feedback on the design principles and measures via an online feedback form, or by sending a written submission by email or post. Submissions were subsequently received from 52 organisations and individuals, including state government agencies, local councils, community-based organisations, private business and the general public.
Feedback summary

Responses to the discussion paper were, on the whole, very supportive of the concept of voluntary best practice design guidelines to help reduce the risk of driveway-related trauma. There was also broad support for the framework of design principles and measures put forward in the paper. However, a range of specific comments and suggestions provided by stakeholder organisations point to some minor adjustments and additions that would improve the framework – and also raise some issues about its application that would warrant further consideration.

While the discussion paper was focused on building design principles, much of the feedback gave attention to education measures and other injury prevention initiatives that would help to improve driveway safety. These included suggestions for improved driver awareness and greater use of relevant vehicle safety technologies such as reversing sensors and/or cameras.

A number of submissions from individual members of the public raised concerns about the prospect of government over-regulation in addressing driveway safety and emphasised the responsibilities of parents for appropriate child supervision.

Several submissions sought to draw lessons from Australia’s approach to pool safety regulation and management, though some noted that driveway safety issues are more complex and are not necessarily comparable.

Additional information is provided in Attachment A, which presents brief summaries of the submissions received from 17 stakeholder organisations.

Key comments and suggestions

As noted above, the feedback included many specific comments and suggestions on the proposed design principles and supporting measures. These are summarised in the key points listed below.

- **Design principle 1: Recognise the vehicle areas on the property as a risk zone (garage to street).**
  - Reference to the risk zone on properties as the vehicle area ‘garage to street’ may exclude dwellings with vehicle areas but no garage; the wording here should be revised accordingly.
  - Compared with the other elements in the framework, the measures under this principle lack guidance on the specific action required: perhaps the intent of the principle and supporting measures could be made clearer.

- **Design principle 2: Limit the size of vehicle areas, and the speed and number of vehicles accessing them.**
  - The measures supporting this principle could include the display of warning signage at multi-unit housing to alert drivers that children may be present.
  - The recommended placement of parking areas as close to the street as possible would, in some situations, conflict with the NSW Residential Flat Design Code which provides design guidelines for apartment buildings. This Code and other planning policies promote the practice of recessing car park entries and garages behind the building line to both improve...
the appearance of the streetscape and allocate different entry points for pedestrians and vehicles, which is in harmony with design principle 3.

- Measures to limit the number of vehicles using a driveway (under 2(d)) may be somewhat impractical to implement.

**Design principle 3: Reduce unintended access to vehicle areas by young children.**

- It could be noted that this principle has other benefits, including separating children from potential exposure to poisons that are commonly stored in garages.
- An additional measure to reduce the risk associated with garage access from inside the home is to install an automatic power cut-off system: the system cuts the power to the main (motorised) door whenever the access door is open.
- In relation to outdoor play areas (under 3(d)), ensure that these areas are positioned where they are clearly visible from inside house.
- Potential conflicts with Australian Standards relating to access may need to be considered.

**Design principle 6: Increase visibility for both pedestrians and drivers at the junction between the driveway/ garage and the footpath.**

- Junction points between driveways and footpaths could be marked in yellow on the driveway edge.

**General points**

- Provisions could be made for different property types as housing varies across metropolitan and rural areas.
- A star-rating system, similar to the ANCAP (vehicle safety) five-star system, could be developed to support the application of the design principles.
- The design principles could be incorporated into other existing initiatives, like the national ‘Creating Places for People’ urban design protocol.
- The guidance material would benefit from the use of diagrams to depict design solutions, similar to the use of diagrams in guidelines for pool safety.
- Further research and evaluation will be needed to assess the impact of the design principles.
- The proposed design guidelines cannot substitute for active and close supervision of young children, and they should include a clearer definition of active supervision.
- Care should be taken in the wording of the guidelines to ensure they do not promote a false sense of security.
- A number of the second and fourth design principles could be addressed in the *Australian Standard 2890.1-2004 ‘Parking facilities – Off-street car parking’*. 
Some principles could potentially conflict with the *Livable Housing Design Guidelines*.

There could be scope to integrate the design principles and measures into a revised edition of *Australian Standard AS 4226-2008 ‘Guidelines for safe housing design’*, noting that Section 2.3 and 2.4 of the current Standard provide some basic guidelines on children’s outdoor play spaces and vehicle access.

It is important to recognise that some of the proposed measures will relate to matters generally controlled through local government codes and policies.
Summary of key submissions from organisations

The **Georgina Josephine Foundation** strongly supported a set of guidelines specifically intended for driveway safety. The Foundation acknowledged that not all principles are practical for all housing situations; however, it supported the idea of a basic level of barrier inclusion in new builds and renovations, and recommended the development of an assessment criterion. The Foundation’s work has focussed on the third design principle and their submission provided specific measures to meet this principle, for example internal garage access doors could be fitted with a door handle 1500mm above floor level. Concern was raised about poor awareness amongst the building and construction industry of existing guidelines, and the need for the proposed driveway safety guidelines to be widely promoted.

**Kidsafe** encouraged: (a) vehicle safety technologies, (b) driver education and awareness programs, (c) greater parental awareness and closer supervision of children and (d) promotion of housing design measures. Kidsafe is currently reviewing its publication ‘Safer Homes for Children – Design and Construction Guidelines’ and is planning to incorporate the Driveway Safety Design principles in a revised edition. Kidsafe suggested a complementary national campaign could be considered to support and promote the principles, and to provide a consistent and clear message about best practice in this area. Kidsafe also advised that further research and evaluation would be needed to assess the impact of the design principles.

The **Commission for Children and Young People and Child Guardian (Queensland)** promoted closer supervision of children, vehicle safety technologies and driver education and awareness campaigns. The Commission added that a resourceful and inquisitive child will require layers of protection and the design principles framework can aid in the provision for many and varied layers of protection.

**Kids and Traffic** emphasised that the design measures cannot substitute for active and close supervision of young children. Their recommendation was that any guidelines should include a clearer definition of *active supervision* similar to what was used by the Queensland Commission for Children and Young People and Child Guardian’s trends and Issues paper 14 released March 2013. Kids and Traffic supported all six design principles although had some concerns for some words used which may provide a false sense of security. Another concern was that the first design principle to recognise the vehicle areas on the property as a risk zone (garage to street) may exclude some dwellings which do not have garages and instead have car parks like childcare centres; the wording here could be revised.

The **City of Sydney Council** suggests that like other safety issues, the driveway safety design guidelines will be best supported by a continuing community safety awareness campaign. A suggested inclusion in the second design principle was the display of warning signage at multi-unit housing to alert drivers that children may be present. The City of Sydney added that the third principle to limit access to vehicle areas for young children has other benefits including separating children from other potential risks of exposure to poisons such as pesticides and fuels which are commonly stored in garages.
The **Department of Planning, Transport and Infrastructure in South Australia** offered many suggestions, notably the following:

1. Distinguish between inner city, middle ring and outer suburban housing.
2. If design principles do not become mandatory then perhaps a star rating similar to the ANCAP 5-star ratings could be developed to incorporate all the design principles.
3. A comprehensive communication strategy with visual examples and possibly a video. Also suggested two strategies for new builds and existing dwellings.
4. The design principles could be incorporated into other existing initiatives, like the national *Creating Places for People* urban design protocol.
5. The development of a national database to record low speed vehicle run over incidents to review strategies going into the future.
6. Amend the Australian Design Rules to develop vehicle visibility standards and mandate rear vision cameras.

The **Department of Planning and Infrastructure in NSW** offered the following comments,

1. The guidelines could distinguish between property types; the examples provided were single dwellings, rural dwellings, housing complexes and apartment buildings.
2. The design principles 2a and 2d could conflict with the NSW “Residential Flat Design Code” which promotes the practice of recessing car park entries and garages behind the building line for apartment buildings.
3. NSW is promoting reduced visitor parking in apartment buildings, which aligns with design principle 2c.
4. A number of the second and fourth design principles could be addressed in the *Australian Standard 2890.1-2004 Parking facilities – Off-street car parking*.

**Disability Care Australia** supported the sixth design principle to increase visibility for both pedestrians and drivers at the junction between the driveway/garage and the footpath.

The **Housing Industry Association (HIA)** agreed that the framework provides a reasonable basis for voluntary guidelines, preferably to be published by relevant child safety education groups such as Kidsafe. However, the Association considered that some of the detailed measures may not give sufficient guidance on the required action to be of practical value. It also suggested that the guidelines could usefully set out who should use them and when, highlighting any overlaps with regulated standards such as local council requirements.

The HIA pointed to a potential interaction with the Livable Housing Design Guidelines, which focus on establishing an easy travel path between a parking area and the home, and suggested this could be acknowledged with a reference in the introduction.

**Master Builders Australia** was concerned with the costs associated with incorporating the driveway safety design principles and stated that some measures are not achievable for all situations. Master Builders suggested that some principles could potentially conflict with the Livable Housing Design Guidelines.
**NRMA Insurance** supported the proposed voluntary driveway safety guidelines and accepted that driveway safety is multi-faceted with no single solution. NRMA Insurance believes that the incidence of driveway accidents requires behavioural change to increase awareness and reduce complacency of drivers. The Reversing Visibility Index (RVI) developed by NRMA Insurance is being used to educate drivers on the visibility for all vehicles and has increased awareness surrounding driveway safety.

The **Royal Automobile Club of Victoria (RACV)** encouraged an extensive public education campaign to promote the driveway safety guidelines, in addition to reversing cameras and sensors.

The **Australian Automobile Association (AAA)** support vehicle technologies such as reversing cameras although warned against relying on this as a sole solution to driveway safety risks. The AAA believes driver education and awareness could form part of the driveway safety design guidelines.

**Bosch** considered vehicle safety technologies with sensor systems and driver training could complement the design measures to reduce infrastructure hazards.

**Reverse Alert Australia Pty Ltd** provided information about the company’s vehicle safety product incorporating reversing sensors, automatic braking technology and optional cameras. The product is a stand-alone system that can be fitted to new and used vehicles.

**APG Interiors** advocated fencing to driveways where possible, noting that multiple parking in apartment buildings could benefit from warning signage and juncture points between driveways and footpaths could be marked in yellow on the driveway edge.

**PDR Engineers** submitted that the proposed guidelines should effect limitations to subdivisions and lot sizes; and commented that Australian Standards covering access would conflict with the proposed design principles (although were not more specific).
Proposed driveway safety design framework

Specific design considerations and measures

For each of the six design principles, a number of specific supporting measures have been proposed. When adopted either singly or in combination, these may reduce the risk of harm to children in residential settings. They have been developed with new builds and major renovations in mind, though some measures may be able to be applied to existing dwellings through retrofitting without excessive cost. Some measures may not be applicable or may be more difficult to apply to some types of dwellings.

1. **Recognise the vehicle areas on the property as a risk zone (garage to street).**
   a) Identify areas on a property where vehicles may travel, including extended driveways and access areas to sheds for farm vehicles.
   b) In designing access routes to a property, consider elements of the local environment including road conditions, neighbouring driveways, nearby vegetation, topography and visibility around the house site that may be a risk to small children.

2. **Limit the size of vehicle areas, and the speed and number of vehicles accessing them.**
   a) Place parking spaces and/or garages as close to the street as possible – to reduce driveway length and the potential for a driveway collision.
   b) Reduce the possibility of informal parking on the block – designated areas should be set aside for vehicle use.
   c) Limit the number of parking spaces on the block to as few as necessary.
   d) Adopt measures to limit speed and number of vehicles using a driveway.
      - This is a particular issue in housing complexes where access to multiple properties is provided through one driveway or access route.
      - Consider using physical devices to limit speed (e.g. speed bumps) in longer driveways.
      - Consider providing visitor parking close to the entrance of a complex.

3. **Reduce unintended access to vehicle areas by young children.**
   a) Where possible, establish separate access routes for pedestrians and vehicles.
   b) Where possible, use barriers to physically separate vehicle access pathways from the rest of the yard.
      - These would function in a similar manner to pool fencing, with self-closing and self-latching gates and latch devices at minimum 1500mm height.
      - This measure is dependent on context and the configuration of the property.
   c) Ensure young children are unable to gain unsupervised access to the vehicle area from inside the home:
      - Avoid having garage access doors in recreational or living rooms, or in other areas where children are likely to spend large amounts of time.
      - Where an access door exists between the home and the garage ensure that it:
        o pushes in toward the home
has a self-closer
- is solid core rather than hollow-core (swings shut properly, too heavy for small fingers to pull open)
- has the door handle placed at a minimum height of 1500mm above floor level.
- In homes where doors may be left open for ventilation, install secure barriers that allow ventilation (security screen or slatted doors), which also push in towards the home, have self-closers, and have high door handles.

d) Provide outdoor play areas that are separated from the vehicle area.
   - Use barriers as described under (b).

4. **Make vehicle areas and their surrounds clearly visible from inside the house.**
   a) Use windows, doors, partitions or glass panels to provide a clear line of sight from the home to the garage and vehicle access areas.

5. **Make vehicle areas and their surrounds clearly visible to drivers leaving and entering the property.**
   a) Consider treatments to improve the driver’s ability to see young children in the vehicle area:
      - Limit the slope, width and length of the driveway.
      - Install garage doors (e.g. slatted doors) that allow the driver to see into and out of the garage.
   b) Avoid plants and landscaping options along driveway areas that may block the driver’s view or interfere with reversing aides.
   c) Avoid having the vehicle access path crossing a pedestrian access path (e.g. between the home and the garage).

6. **Increase visibility for both pedestrians and drivers at the junction between the driveway/ garage and the footpath**
   a) Enable vehicles entering or exiting the property to see and be seen and heard:
      - Use transparent barriers or slatted partitions rather than solid walls where a garage exits directly onto the footpath;
      - Ensuring that side boundary fencing does not interfere with a clear line of sight for vehicles leaving a garage or driveway.
   b) Consider installing external gates, fences and walls that allow pedestrians and drivers to see each other.
   c) Consider the use of appropriately placed outdoor mirrors.
   d) Avoid plants and landscaping options along the block frontage that may block either driver or pedestrian views.